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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/525,159	Applicant(s) ICHIBA, HIROYUKI	
	Examiner NURI ALTUN	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **1, 8 and 9** are rejected under 35 U.S.C. 102(b) as being anticipated by **Oki (JPO 05248496)**.

As per claim 1, Oki teaches a transmission belt (11) comprising:

a contact face (14b) contacting with a pulley (9, 10, 7, 13) when said transmission belt is wound around said pulley (see Fig. 1),

a piece of foreign matter (16) embedded near said contact face and at a distance from said contact face in said transmission belt (see abstract and Figs. 2 and 3),

such that upon said contact face being worn by said pulley when said transmission belt (11) rotates around said pulley, then said foreign matter (16) is exposed at said contact face so as to warn of a decrease in the transmission power of said transmission belt on said pulley, wherein said foreign matter contacting said pulley makes a warning sound to warn of a decrease in the transmission power (see abstract),

As per claim 8, Oki teaches piece of foreign matter (16) contacts said pulley whereby a warning sound having a specific frequency is generated (see abstract; since the belt wears due to rotation on the pulley and transmission power decreases, foreign matter will be exposed, and it is construed that the foreign matter will inherently make a

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sound with specific frequency corresponding to the speed of the pulley when it contacts the pulley).

As per claim 9, Oki teaches a belt (11) wound around a pulley (9, 10, 7, 13) (see Fig. 1), comprising:

a belt body (7), which is made of a predetermined material, having a certain thickness between a first surface of said belt body (14b) and a second surface of said belt body (see Fig. 1),

and a piece of foreign matter (16), which is made of a different material from said predetermined material, embedded in said belt body at a distance from said surface (14b) (see abstract and Figs. 2 and 3);

the distance (1st distance) from said foreign matter (16) to the first surface of said belt body in the thickness direction being shorter than the distance (2nd distance) from said foreign matter to the second surface of said belt body in the thickness direction (see Fig. B),

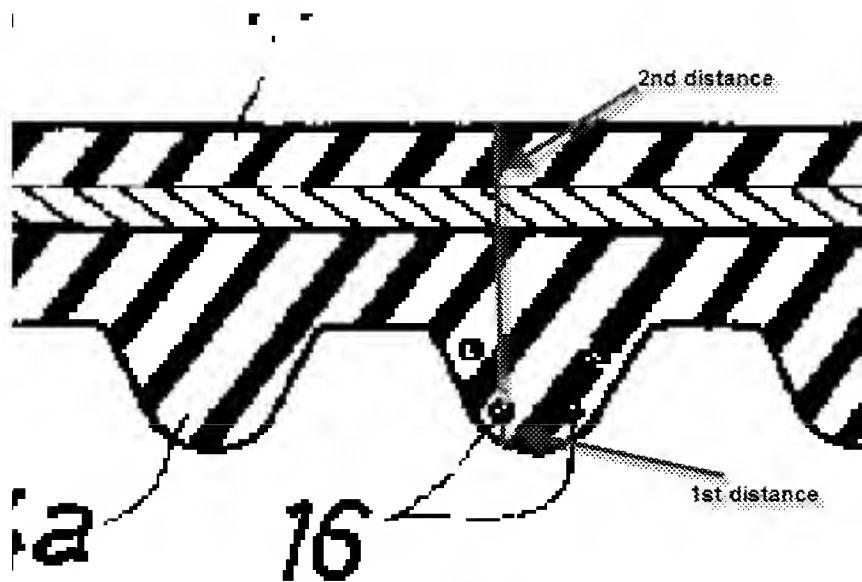


Fig. 8

wherein when said first surface is worn by said pulley so that said foreign matter is exposed at said first surface, then said foreign matter contacting said pulley makes a sound when said transmission belt rotates around said pulley (see abstract; it is also inherent that belt will wear as it rotates around pulley and foreign matter will be exposed).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ok** (JPO 05248496).

As per claim 3, Oki teaches all the structural elements of the claimed invention as mentioned in claim 1, but doesn't explicitly disclose said foreign matter being softer than said pulley.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify said foreign matter being softer than said pulley in order to prevent damage to the pulley. Also note *MPEP Section 2144.07* states that the selection of a known material based on its suitability for its intended use supports a prima facie obviousness determination.

3. Claims **4, 5, 6, 13 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Oki (JPO 05248496)**, in view of **Kazuhiko (JPO 9256865)**.

As per claim 4, Oki teaches all the structural limitations of the claimed invention, as mentioned in claim 1, but doesn't explicitly disclose said piece of foreign matter has a longitudinal direction and said longitudinal direction of said foreign matter is substantially in the direction perpendicular to said contact face.

Kazuhiko teaches a deflection detecting device for annular transmission body having piece of foreign matter (14) has a longitudinal direction and said longitudinal direction of said foreign matter is substantially in the direction perpendicular to contact face. (see Fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the belt of Oki to include a piece of foreign matter having a longitudinal direction as taught by Kazuhiko in order to maximize the warning sound at the time of contact.

As per claim 5, Oki and Kazuhiko combination teaches all the structural elements of the claimed invention as mentioned in claim 4, but doesn't explicitly disclose said piece of foreign matter has a cross section of variable width such that width of said foreign matter is narrower for portions of said foreign matter closer to said contact face and wider for portions of said foreign matter farther from said contact surface.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify said piece of foreign matter to have a cross section of variable width such that width of said foreign matter is narrower for portions of said foreign matter closer to said contact face and wider for portions of said foreign matter farther from said contact surface in order for the foreign matter to fit into the belt assembly with proper retention. Also note *MPEP Section 2144.04 B* states that the configuration of the claimed part is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed part was significant.

As per claim 6, Oki teaches a plurality of pieces of said foreign matter are embedded in said transmission belt (see Figure 1 and abstract),

a distance (1st distance) between contact face and the top of at least one piece of said foreign matter (16) is different from a distance between contact face and the top of another piece of said foreign matter (2nd distance) (see Fig. A).

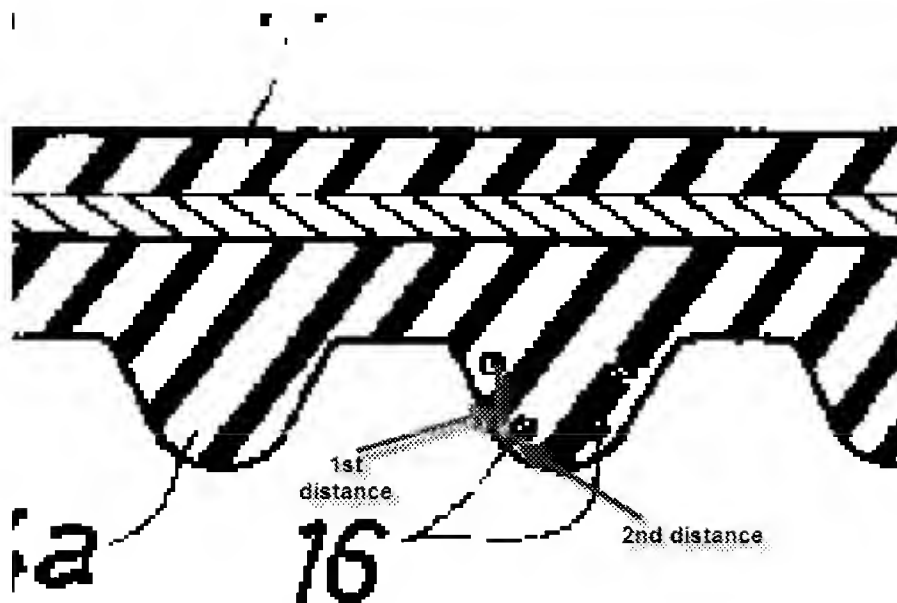


Fig. A

Oki doesn't explicitly disclose each said piece having a longitudinal direction and a top, and said longitudinal direction substantially in the direction perpendicular to said contact face and with said top closest to said contact face.

Kazuhiko teaches each piece of foreign matter (14) having a longitudinal direction and a top, and said longitudinal direction substantially in the direction perpendicular to said contact face and with said top closest to said contact face (see Fig. 2)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the belt of Oki to include a piece of foreign matter having a longitudinal direction as taught by Kazuhiko in order to maximize the warning sound at the time of contact.

As per claim 13, Oki teaches a transmission belt (11) comprising:

a contact face (14b) contacting with a pulley when said transmission belt is wound around said pulley (see Fig. 1), and

a piece of foreign matter (16) embedded near said contact face and at a distance from said contact face in said transmission belt (see abstract and Figs. 2 and 3),

such that upon said contact face being worn by said pulley when said transmission belt (11) rotates around said pulley, then said foreign matter (16) is exposed at said contact face so as to warn of a decrease in the transmission power of said transmission belt on said pulley,

Oki doesn't explicitly disclose said piece of foreign matter has a longitudinal direction and a cross section of variable width, and said longitudinal direction of said foreign matter is substantially in a direction perpendicular to said contact face, and said width of said foreign matter is narrower for portions of said foreign matter closer to said contact face.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify said piece of foreign matter to have a cross section of variable width such that width of said foreign matter is narrower for portions of said foreign matter closer to said contact face in order for the foreign matter to fit into the belt assembly with proper retention. Also note *MPEP Section 2144.04 B* states that the configuration of the claimed part is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed part was significant.

Kazuhiko teaches a piece of foreign matter (14) has a longitudinal direction and said longitudinal direction of said foreign matter is substantially in the direction perpendicular to contact face. (see Fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the belt of Oki to include a piece of foreign matter having a longitudinal direction as taught by Kazuhiko in order to maximize the warning sound at the time of contact.

As per claim 14, Oki teaches a belt (11) comprising:

a belt body (7), which is made of a predetermined material, having a certain thickness between a first surface of said belt body (14b) and a second surface of said belt body (see Fig. 1),

and a piece of foreign matter (16), which is made of a different material from said predetermined material, embedded in said belt body at a distance from said surface (14b) (see abstract and Figs. 2 and 3);

the distance (1st distance) from said foreign matter (16) to the first surface of said belt body in the thickness direction being shorter than the distance (2nd distance) from said foreign matter to the second surface of said belt body in the thickness direction (see Fig. B),

Oki doesn't explicitly disclose said piece of foreign matter has a longitudinal direction and a cross section of variable width, and said longitudinal direction of said foreign matter is substantially in a direction perpendicular to said first surface, and said

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width of said foreign matter is narrower for portions of said foreign matter closer to said first surface.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify said piece of foreign matter to have a cross section of variable width such that width of said foreign matter is narrower for portions of said foreign matter closer to said first surface in order for the foreign matter to fit into the belt assembly with proper retention. Also note *MPEP Section 2144.04 B* states that the configuration of the claimed part is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed part was significant.

Kazuhiko teaches a piece of foreign matter (14) has a longitudinal direction and said longitudinal direction of said foreign matter is substantially in the direction perpendicular to contact face. (see Fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the belt of Oki to include a piece of foreign matter having a longitudinal direction as taught by Kazuhiko in order to maximize the warning sound at the time of contact.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Oki (JPO 05248496)**, in view of **Cicognani (GB2046399)**.

Oki teaches all the structural elements of the claimed invention as mentioned in claim 1, but doesn't explicitly disclose said piece of foreign matter being given a color, which is different from a color of other parts of said transmission belt.

Cicognani teaches a toothed transmission belt having piece of foreign matter (8) being given a color, which is different from a color of other parts (6 and 7) of said transmission belt (see abstract).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oki to include the belt having foreign matter of different color taught by Cicognani in order to visually indicate the wear of the belt.

5. Claims **10-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Oki (JPO 05248496)**, in view of **Mohr et al. (6,672,983)**.

As per claim 10, Oki teaches an indication apparatus for indicating the end of life of a transmission belt, comprising:

a pulley (9, 10, 7, 13), a transmission belt (11) that is wound around said pulley (see Fig. 1) having;

a contact face (14b) contacting said pulley when said transmission belt is wound around said pulley; and a piece of foreign matter (16) embedded near said contact face and at a distance from said contact face in said transmission belt (see Fig. 1),

such that upon said contact face being worn by said pulley when said transmission belt rotates around said pulley, then said foreign matter is exposed at said contact face, whereby said foreign matter contacting said pulley makes a specific sound

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(see abstract; it is also inherent that belt will wear as it rotates around pulley and foreign matter will be exposed),

However Oki doesn't explicitly disclose a sound sensor, which detects said specific sound, set up near where said transmission belt contacts said pulley; and a warning apparatus which sends out a warning according to said specific sound detected by said sound sensor.

Mohr et al. teach a sound sensor, which detects said specific sound, set up near where said transmission belt contacts said pulley; and a warning apparatus which sends out a warning according to said specific sound detected by said sound sensor (col. 4, lines 13-15).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oki to include sensor taught by Mohr et al. in order to improve the warning system of transmission power decrease.

As per claim 11, Oki teaches all structural elements of the claimed invention as mentioned in claim 10, but doesn't explicitly disclose said foreign matter contacting said pulley at a predetermined cycle making a specific sound appear at said predetermined cycle when said transmission belt rotates at a predetermined speed.

Mohr et al. teach said foreign matter contacting said pulley at a predetermined cycle making a specific sound appear at said predetermined cycle(col.4, lines 41-43) when said transmission belt rotates at a predetermined speed (col.4, lines 11-12).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oki to include the warning system taught by Mohr et al. in order to indicate the end of life of transmission belt better.

As per claim 12, Oki teaches all structural elements of the claimed invention as mentioned in claim 11, but doesn't explicitly disclose warning apparatus sending out a warning when said specific sound appears at said predetermined cycle.

Mohr et al. teach warning apparatus sending out a warning when said specific sound appears at said predetermined cycle (col.4, lines 11-15).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oki to include warning apparatus taught by Mohr et al. in order to improve the warning system of transmission power decrease.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NURI ALTUN whose telephone number is (571)270-5807. The examiner can normally be reached on Mon-Fri 7:30 - 5:00 with first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272 7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/
Primary Examiner, Art Unit 3657

NBA